



SEQUENCE LISTING

<110> Kotwal, Girish J.
Daly, James

<120> Application of a Viral Complement
Inhibitory Protein in the Treatment and Diagnosis of
Alzheimer's Disease

<130> 17541/033US1

<140> 09/889,624

<141> 2001-11-07

<150> PCT/US00/01115

<151> 2000-01-19

<150> 60/116,328

<151> 1999-01-19

<160> 12

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 263

<212> PRT

<213> Vaccinia Virus

<400> 1

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			20					25					30			
Lys	Asn	Ser	Val	Glu	Thr	Asp	Ala	Asn	Ala	Asn	Tyr	Asn	Ile	Gly	Asp	
			35				40					45				
Thr	Ile	Glu	Tyr	Leu	Cys	Leu	Pro	Gly	Tyr	Arg	Lys	Gln	Lys	Met	Gly	
			50			55					60					
Pro	Ile	Tyr	Ala	Lys	Cys	Thr	Gly	Thr	Gly	Trp	Thr	Leu	Phe	Asn	Gln	
65					70					75				80		
Cys	Ile	Lys	Arg	Arg	Cys	Pro	Ser	Pro	Arg	Asp	Ile	Asp	Asn	Gly	Gln	
				85					90					95		
Leu	Asp	Ile	Gly	Gly	Val	Asp	Phe	Gly	Ser	Ser	Ile	Thr	Tyr	Ser	Cys	
			100					105					110			
Asn	Ser	Gly	Tyr	His	Leu	Ile	Gly	Glu	Ser	Lys	Ser	Tyr	Cys	Glu	Leu	
			115				120					125				
Gly	Ser	Thr	Gly	Ser	Met	Val	Trp	Asn	Pro	Glu	Ala	Pro	Ile	Cys	Glu	
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Ser	Val	Lys	Cys	Gln	Ser	Pro	Pro	Ser	Ile	Ser	Asn	Gly	Arg	His	Asn	
145					150					155				160		
Gly	Tyr	Glu	Asp	Phe	Tyr	Thr	Asp	Gly	Ser	Val	Val	Thr	Tyr	Ser	Cys	
				165				170					175			
Asn	Ser	Gly	Tyr	Ser	Leu	Ile	Gly	Asn	Ser	Gly	Val	Leu	Cys	Ser	Gly	
			180				185					190				
Gly	Glu	Trp	Ser	Asp	Pro	Pro	Thr	Cys	Gln	Ile	Val	Lys	Cys	Pro	His	
			195				200					205				
Pro	Thr	Ile	Ser	Asn	Gly	Tyr	Leu	Ser	Ser	Gly	Phe	Lys	Arg	Ser	Tyr	

210		215		220
Ser Tyr Asn Asp Asn Val Asp Phe Lys Cys Lys Tyr Gly Tyr Lys Leu				
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Ser Gly Ser Ser Ser Ser Thr Cys Ser Pro Gly Asn Thr Trp Lys Pro				
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<210> 2

<211> 840

<212> DNA

<213> Vaccinia Virus

<400> 2

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ccgtcacgac ccattaatat gaaatttaag aatagtgtgg agactgatgc taatgctaata 180
tacaacatag gagacactat agaatatcta tgtctacctg gatacagaaa gcaaaaaatg 240
ggacctatat atgctaaatg tacaggtact ggatggacac tctttaatca atgtattaaa 300
cggagatgcc catcgctctg agatatcgat aatggccaac ttgatattgg tggagtagac 360
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tcgtattgtg aattaggatc tactggatct atgggtatgga atcccagggc acctatttgt 480
gaatctgtta aatgccaatc ccctccatct atatccaacg gaagacataa cggatacagag 540
gatttttata ccgatgggag cgttgttaact tatagttgca atagtggata ttcgttgatt 600
ggtaactctg gtgtcctgtg ttcaggagga gaatgggtccg atccaccac gtgtcagatt 660
gttaaagtgc cacatcctac aatatcaaac ggatacttgt ctacggggtt taaaagatca 720
tactcataca acgacaatgt agactttaag tgcaagtacg gatataaact atctggttcc 780
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<210> 3

<211> 1205

<212> DNA

<213> Artificial Sequence

<220>

<223> C-terminus (nucleotides 1786-3207) of amyloid precursor protein (APP)

<400> 3

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tgttctttgc agaagatgtg ggttcaaaca aagggtgcaat cattggactc atgggtgggcg 180
gtgttgtcat agcgacagtg atcgatcatca ccttgggtgat gctgaagaag aaacagtaca 240
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tgtccaagat gcagcagaac ggctacgaaa atccaaccta caagttcttt gagcagatgc 360
agaactagac ccccgccaca gcagcctctg aagttggaca gcaaaaccat tgcttacta 420
cccatcggtg tccatttata gaataatgtg ggaagaaaca aaccggttt atgatttact 480
cattatcgcc ttttgacagc tgtgctgtaa cacaagtaga tgcctgaact tgaattaatc 540
cacacatcag taatgtattc tatctctctt tacattttgg tctctatact acattattaa 600
tggtttttgt gtactgtaaa gaatttagct gtatcaaact agtgcataaa tagattctct 660
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caattaagtc ctactttaca tatgctttta gaatcgatgg gggatgcttc atgtgaacgt 780
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actgtacaga ttgctgcttc tgctatatat gtgatataag aattaagagg atacacacgt 960
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<210> 4

<211> 100

<212> PRT

<213> Artificial Sequence

<220>

<223> C-terminus (nucleotides 1786-3207) of amyloid precursor protein (APP)

<400> 4

Met	Asp	Ala	Glu	Phe	Arg	His	Asp	Ser	Gly	Tyr	Glu	Val	His	His	Gln
1				5					10				15		
Lys	Leu	Val	Phe	Phe	Ala	Glu	Asp	Val	Gly	Ser	Asn	Lys	Gly	Ala	Ile
			20				25					30			
Ile	Gly	Leu	Met	Val	Gly	Gly	Val	Val	Ile	Ala	Thr	Val	Ile	Val	Ile
		35				40						45			
Thr	Leu	Val	Met	Leu	Lys	Lys	Lys	Gln	Tyr	Thr	Ser	Ile	His	His	Gly
	50				55						60				
Val	Val	Glu	Val	Asp	Ala	Ala	Val	Thr	Pro	Glu	Glu	Arg	His	Leu	Ser
65					70					75				80	
Lys	Met	Gln	Gln	Asn	Gly	Tyr	Glu	Asn	Pro	Thr	Tyr	Lys	Phe	Phe	Glu
				85				90						95	
Gln	Met	Gln	Asn												
			100												

<210> 5

<211> 244

<212> PRT

<213> Vaccinia Virus, Copenhagen Strain

<400> 5

Cys	Cys	Thr	Ile	Pro	Ser	Arg	Pro	Ile	Asn	Met	Lys	Phe	Lys	Asn	Ser
1				5					10					15	
Val	Glu	Thr	Asp	Ala	Asn	Ala	Asn	Tyr	Asn	Ile	Gly	Asp	Thr	Ile	Glu
			20				25					30			
Tyr	Leu	Cys	Leu	Pro	Gly	Tyr	Arg	Lys	Gln	Lys	Met	Gly	Pro	Ile	Tyr
		35				40						45			
Ala	Lys	Cys	Thr	Gly	Thr	Gly	Trp	Thr	Leu	Phe	Asn	Gln	Cys	Ile	Lys
	50				55						60				
Arg	Arg	Cys	Pro	Ser	Pro	Arg	Asp	Ile	Asp	Asn	Gly	Gln	Leu	Asp	Ile
65					70					75				80	
Gly	Gly	Val	Asp	Phe	Gly	Ser	Ser	Ile	Thr	Tyr	Ser	Cys	Asn	Ser	Gly
			85					90						95	
Tyr	His	Leu	Ile	Gly	Glu	Ser	Lys	Ser	Tyr	Cys	Glu	Leu	Gly	Ser	Thr
		100					105						110		
Gly	Ser	Met	Val	Trp	Asn	Pro	Glu	Ala	Pro	Ile	Cys	Glu	Ser	Val	Lys
		115				120						125			
Cys	Gln	Ser	Pro	Pro	Ser	Ile	Ser	Asn	Gly	Arg	His	Asn	Gly	Tyr	Glu
	130				135						140				
Asp	Phe	Tyr	Thr	Asp	Gly	Ser	Val	Val	Thr	Tyr	Ser	Cys	Asn	Ser	Gly
145					150					155				160	
Tyr	Ser	Leu	Ile	Gly	Asn	Ser	Gly	Val	Leu	Cys	Ser	Gly	Gly	Glu	Trp
			165				170							175	
Ser	Asp	Pro	Pro	Thr	Cys	Gln	Ile	Val	Lys	Cys	Pro	His	Pro	Thr	Ile
		180					185						190		
Ser	Asn	Gly	Tyr	Leu	Ser	Ser	Gly	Phe	Lys	Arg	Ser	Tyr	Ser	Tyr	Asn

	195		200		205
Asp	Asn Val Asp Phe Lys Cys Lys Tyr Gly Tyr Lys Leu Ser Gly Ser				
210		215		220	
Ser Ser Ser Thr Cys Ser Pro Gly Asn Thr Trp Lys Pro Glu Leu Pro					
225		230		235	240
Lys Cys Val Arg					

<210> 6

<211> 244

<212> PRT

<213> Vaccinia Virus, Western Reserve Strain

<400> 6

Cys Cys Thr Ile Pro Ser Arg Pro Ile Asn Met Lys Phe Lys Asn Ser
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Val Glu Thr Asp Ala Asn Ala Asn Tyr Asn Ile Gly Asp Thr Ile Glu
20 25 30
Tyr Leu Cys Leu Pro Gly Tyr Arg Lys Gln Lys Met Gly Pro Ile Tyr
35 40 45
Ala Lys Cys Thr Gly Thr Gly Trp Thr Leu Phe Asn Gln Cys Ile Lys
50 55 60
Arg Arg Cys Pro Ser Pro Arg Asp Ile Asp Asn Gly Gln Leu Asp Ile
65 70 75 80
Gly Gly Val Asp Phe Gly Ser Ser Ile Thr Tyr Ser Cys Asn Ser Gly
85 90 95
Tyr His Leu Ile Gly Glu Ser Lys Ser Tyr Cys Glu Leu Gly Ser Thr
100 105 110
Gly Ser Met Val Trp Asn Pro Glu Ala Pro Ile Cys Glu Ser Val Lys
115 120 125
Cys Gln Ser Pro Pro Ser Ile Ser Asn Gly Arg His Asn Gly Tyr Glu
130 135 140
Asp Phe Tyr Thr Asp Gly Ser Val Val Thr Tyr Ser Cys Asn Ser Gly
145 150 155 160
Tyr Ser Leu Ile Gly Asn Ser Gly Val Leu Cys Ser Gly Gly Glu Trp
165 170 175
Ser Asp Pro Pro Thr Cys Gln Ile Val Lys Cys Pro His Pro Thr Ile
180 185 190
Ser Asn Gly Tyr Leu Ser Ser Gly Phe Lys Arg Ser Tyr Ser Tyr Asn
195 200 205
Asp Asn Val Asp Phe Lys Cys Lys Tyr Gly Tyr Lys Leu Ser Gly Ser
210 215 220
Ser Ser Ser Thr Cys Ser Pro Gly Asn Thr Trp Lys Pro Glu Leu Pro
225 230 235 240
Lys Cys Val Arg

<210> 7

<211> 240

<212> PRT

<213> Cowpox Virus, Russian Isolate From Human Patient

<400> 7

Cys Cys Pro Ile Pro Ser Arg Pro Ile Thr Met Lys Phe Lys Gly Thr
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Val Asp Ser His Tyr Asn Ile Gly Asp Thr Ile Glu Tyr Leu Cys Leu
20 25 30

Pro Gly Tyr Arg Lys Gln Lys Met Gly Pro Ile Tyr Ala Lys Cys Thr
 35 40 45
 Gly Thr Gly Trp Thr Leu Phe Asn Gln Cys Ile Lys Arg Arg Cys Pro
 50 55 60
 Ser Pro Arg Asp Ile Asp Asn Gly Gln Leu Asp Ile Gly Gly Val Asp
 65 70 75 80
 Phe Gly Ser Ser Ile Thr Tyr Ser Cys Asn Ser Gly Tyr His Leu Ile
 85 90 95
 Gly Glu Ser Lys Ser Tyr Cys Glu Leu Gly Ser Thr Gly Ser Met Val
 100 105 110
 Trp Asn Pro Glu Ala Pro Ile Cys Glu Ser Val Lys Cys Gln Ser Pro
 115 120 125
 Pro Ser Ile Ser Asn Gly Arg His Asn Gly Tyr Glu Asp Phe Tyr Thr
 130 135 140
 Asp Gly Ser Val Val Thr Tyr Ser Cys Asn Ser Gly Tyr Ser Leu Ile
 145 150 155 160
 Gly Asn Ser Gly Val Leu Cys Ser Gly Gly Glu Trp Ser Asp Pro Pro
 165 170 175
 Thr Cys Gln Ile Val Lys Cys Pro His Pro Thr Ile Ser Asn Gly Tyr
 180 185 190
 Leu Ser Ser Gly Phe Lys Arg Ser Tyr Ser Tyr Asn Asp Asn Val Asp
 195 200 205
 Phe Lys Cys Lys Tyr Gly Tyr Lys Leu Ser Gly Ser Ser Ser Ser Thr
 210 215 220
 Cys Ser Pro Gly Asn Thr Trp Gln Pro Glu Leu Pro Lys Cys Val Arg
 225 230 235 240

<210> 8

<211> 244

<212> PRT

<213> Cowpox Virus, Brighton Strain

<400> 8

Cys Cys Thr Ile Pro Ser Arg Pro Ile Asn Met Lys Phe Lys Asn Ser
 1 5 10 15
 Val Gly Thr Asp Ala Asn Ala Asn Tyr Asn Ile Gly Asp Thr Ile Glu
 20 25 30
 Tyr Leu Cys Leu Pro Gly Tyr Arg Lys Gln Lys Met Gly Pro Ile Tyr
 35 40 45
 Ala Lys Cys Thr Gly Thr Gly Trp Thr Leu Phe Asn Gln Cys Ile Lys
 50 55 60
 Arg Lys Cys Pro Ser Pro Arg Asp Ile Asp Asn Gly Gln Ile Asp Ile
 65 70 75 80
 Gly Gly Val Glu Phe Gly Ser Ser Ile Thr Tyr Ser Cys Asn Ser Gly
 85 90 95
 Tyr Gln Leu Ile Gly Glu Ser Lys Ser Tyr Cys Glu Leu Gly Tyr Thr
 100 105 110
 Gly Ser Met Val Trp Asn Pro Glu Ala Pro Ile Cys Glu Ser Val Lys
 115 120 125
 Cys Pro Ser Pro Pro Ser Val Thr Asn Gly Arg His Asn Gly Tyr Glu
 130 135 140
 Asp Phe Tyr Thr Asp Gly Ser Val Val Thr Tyr Ser Cys Asn Ser Gly
 145 150 155 160
 Tyr Ser Leu Ile Gly Asn Ser Gly Ile Val Cys Ser Gly Gly Glu Trp
 165 170 175
 Ser Asp Pro Pro Thr Cys Gln Ile Val Lys Cys Pro His Pro Ser Ile
 180 185 190

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Thr Asn Gly Tyr Leu Ser Ser Gly Phe Lys Arg Ser Tyr Ser His Asn
    195                200                205
Asp Asn Val Asp Phe Lys Cys Arg His Gly Tyr Lys Leu Ser Gly Ser
    210                215                220
Ser Ser Ser Thr Cys Ser Pro Gly Asn Thr Trp Gln Pro Glu Leu Pro
225                230                235                240
Lys Cys Val Arg

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<210> 9

<211> 244

<212> PRT

<213> Variola Virus, Bangladesh Strain

<400> 9

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Cys Cys Thr Ile Pro Ser Arg Pro Ile Asn Met Lys Phe Lys Asn Ser
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Val Glu Thr Asp Ala Asn Ala Asn Tyr Asn Ile Gly Asp Thr Ile Glu
    20      25      30
Tyr Leu Cys Leu Pro Gly Tyr Arg Lys Gln Lys Met Gly Pro Ile Tyr
    35      40      45
Ala Lys Cys Thr Gly Thr Gly Trp Thr Leu Phe Asn Gln Cys Ile Lys
    50      55      60
Arg Arg Cys Pro Ser Pro Arg Asp Ile Asp Asn Gly His Leu Asp Ile
65      70      75      80
Gly Gly Val Asp Phe Gly Ser Ser Ile Thr Tyr Ser Cys Asn Ser Gly
    85      90      95
Tyr Tyr Leu Ile Gly Glu Tyr Lys Ser Tyr Cys Lys Leu Gly Ser Thr
    100     105     110
Gly Ser Met Val Trp Asn Pro Lys Ala Pro Ile Cys Glu Ser Val Lys
    115     120     125
Cys Gln Leu Pro Pro Ser Ile Ser Asn Gly Arg His Asn Gly Tyr Asn
    130     135     140
Asp Phe Tyr Thr Asp Gly Ser Val Val Thr Tyr Ser Cys Asn Ser Gly
145     150     155     160
Tyr Ser Leu Ile Gly Asn Ser Gly Val Leu Cys Ser Gly Gly Glu Trp
    165     170     175
Ser Asn Pro Pro Thr Cys Gln Ile Val Lys Cys Pro His Pro Thr Ile
    180     185     190
Leu Asn Gly Tyr Leu Ser Ser Gly Phe Lys Arg Ser Tyr Ser Tyr Asn
    195     200     205
Asp Asn Val Asp Phe Thr Cys Lys Tyr Gly Tyr Lys Leu Ser Gly Ser
210     215     220
Ser Ser Ser Thr Cys Ser Pro Gly Asn Thr Trp Gln Pro Glu Leu Pro
225     230     235     240
Lys Cys Val Arg

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<210> 10

<211> 244

<212> PRT

<213> Variola Major Virus, Indian Strain

<400> 10

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Cys Cys Thr Ile Pro Ser Arg Pro Ile Asn Met Thr Phe Lys Asn Ser
 1      5      10      15
Val Glu Thr Asp Ala Asn Ala Asn Tyr Asn Ile Gly Asp Thr Ile Glu

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			20					25					30			
Tyr	Leu	Cys	Leu	Pro	Gly	Tyr	Arg	Lys	Gln	Lys	Met	Gly	Pro	Ile	Tyr	
		35					40					45				
Ala	Lys	Cys	Thr	Gly	Thr	Gly	Trp	Thr	Leu	Phe	Asn	Gln	Cys	Ile	Lys	
	50					55					60					
Arg	Arg	Cys	Pro	Ser	Pro	Arg	Asp	Ile	Asp	Asn	Gly	His	Leu	Asp	Ile	
65					70				75					80		
Gly	Gly	Val	Asp	Phe	Gly	Ser	Ser	Ile	Thr	Tyr	Ser	Cys	Asn	Ser	Gly	
			85					90					95			
Tyr	Tyr	Leu	Ile	Gly	Glu	Tyr	Lys	Ser	Tyr	Cys	Lys	Leu	Gly	Ser	Thr	
		100					105					110				
Gly	Ser	Met	Val	Trp	Asn	Pro	Lys	Ala	Pro	Ile	Cys	Glu	Ser	Val	Lys	
		115				120					125					
Cys	Gln	Leu	Pro	Pro	Ser	Ile	Ser	Asn	Gly	Arg	His	Asn	Gly	Tyr	Asn	
	130					135				140						
Asp	Phe	Tyr	Thr	Asp	Gly	Ser	Val	Val	Thr	Tyr	Ser	Cys	Asn	Ser	Gly	
145				150					155					160		
Tyr	Ser	Leu	Ile	Gly	Asn	Ser	Gly	Val	Leu	Cys	Ser	Gly	Gly	Glu	Trp	
			165				170						175			
Ser	Asn	Pro	Pro	Thr	Cys	Gln	Ile	Val	Lys	Cys	Pro	His	Pro	Thr	Ile	
		180				185					190					
Leu	Asn	Gly	Tyr	Leu	Ser	Ser	Gly	Phe	Lys	Arg	Ser	Tyr	Ser	Tyr	Asn	
	195					200				205						
Asp	Asn	Val	Asp	Phe	Thr	Cys	Lys	Tyr	Gly	Tyr	Lys	Leu	Ser	Gly	Ser	
	210				215				220							
Ser	Ser	Ser	Thr	Cys	Ser	Pro	Gly	Asn	Thr	Trp	Gln	Pro	Glu	Leu	Pro	
225				230					235					240		
Lys	Cys	Val	Arg													

<210> 11

<211> 244

<212> PRT

<213> Variola Minor Virus, Alastrim Garcia Strain

<400> 11

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Val	Glu	Thr	Asp	Ala	Asn	Ala	Asn	Tyr	Asn	Ile	Gly	Asp	Thr	Ile	Glu	
		20					25				30					
Tyr	Leu	Cys	Leu	Pro	Gly	Tyr	Arg	Lys	Gln	Lys	Met	Gly	Pro	Ile	Tyr	
	35					40					45					
Ala	Lys	Cys	Thr	Gly	Thr	Gly	Trp	Thr	Leu	Phe	Asn	Gln	Cys	Ile	Lys	
	50				55					60						
Arg	Arg	Cys	Pro	Ser	Pro	Arg	Asp	Ile	Asp	Asn	Gly	His	Leu	Asp	Ile	
65				70				75						80		
Gly	Gly	Val	Asp	Phe	Gly	Ser	Ser	Ile	Thr	Tyr	Ser	Cys	Asn	Ser	Gly	
			85					90					95			
Tyr	Tyr	Leu	Ile	Gly	Glu	Tyr	Lys	Ser	Tyr	Cys	Lys	Leu	Gly	Ser	Thr	
		100					105					110				
Gly	Ser	Met	Val	Trp	Asn	Pro	Lys	Ala	Pro	Ile	Cys	Glu	Ser	Val	Lys	
		115				120					125					
Cys	Gln	Leu	Pro	Pro	Ser	Ile	Ser	Asn	Gly	Arg	His	Asn	Gly	Tyr	Asn	
	130					135				140						
Asp	Phe	Tyr	Thr	Asp	Gly	Ser	Val	Val	Thr	Tyr	Ser	Cys	Asn	Ser	Gly	
145				150					155					160		
Tyr	Ser	Leu	Ile	Gly	Asn	Ser	Gly	Val	Leu	Cys	Ser	Gly	Gly	Glu	Trp	

<211> 197

<212> PRT

<213> Monkeypox Virus, Isolated from a Human Patient fr6

<400> 12

[illegible]